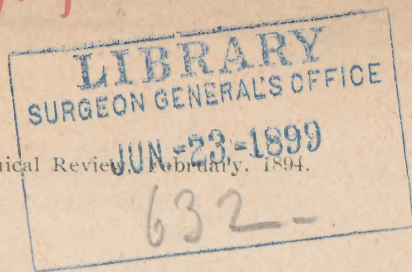


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## THE SURGICAL TREATMENT OF CLEFT PALATE.

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Most of the methods of operation for the closure of clefts extending into or entirely through the hard palate have been very tedious and more or less unsatisfactory.

<sup>1</sup>Simple freshening of the edges and uniting the soft tissues with sutures suffices in only a very small number of cases. <sup>2</sup>Flap operations, which may or may not include the periosteum, are likely to cause an increase of the defect by resulting in sloughing; moreover, if union takes place the patient's speech is usually but slightly improved because of the pliable condition of the palate thus formed. <sup>3</sup>Lateral incisions through the soft parts for the purpose of relieving tension suffices only in cases in which the cleft is narrow. <sup>4</sup>Chiseling loose the internal pterygoid plate for the purpose of loosening the hamular process is also not sufficient in extensive clefts. <sup>5</sup>During the past four years I have practiced a method revived by Dr. Julius Wolff, and advocated by him in a very enthusiastic manner in a number of excellent papers.

This method, which is exceedingly simple, has enabled me to close the clefts in twenty successive cases. These defects in the hard palate varied in extent; some were less than an inch in length, while others extended through the entire palate and the alveolar process.

The patients were from three to seventeen years of age. They all recovered; none of them required more than three operations, three of them still have defects awaiting a second operation. In all of the other cases the defects are entirely closed.

The patient is thoroughly anæsthetized, placed in the dorsal recumbent position, with his head hanging over the end of the table. A simple gag is placed between the teeth and the mouth is opened to the fullest extent.

The edges of the cleft are now denuded throughout by means of a very sharp tenotome, transfixing the edge near the angle anteriorly, grasping the end of the uvula with a fine-toothed forceps and cutting away a thin film of mucous membrane along the entire edge. This causes but a very slight amount of hæmorrhage, which is controlled by pressure with a gauze sponge. An incision is next made along the alveolar process on either side. The hæmorrhage is again controlled by pressure, then a very sharp, thin chisel is applied along this incision to the palatine process, and the latter is thus thoroughly mobilized on each side. Introducing the little finger above the palatine process gives one an accurate idea of the point at which the latter should be severed with the chisel in order to make the bone flaps as large as possible. They should come together without the slightest tension. Two silkworm-gut sutures are now applied, one in the posterior, the other in the anterior part of this incision, surrounding the entire flap composed of the mobilized bone and the soft tissues above and beneath it.

These stitches remain untied until the coaptation stitches are applied and tied. The latter are placed about one-sixth of an inch apart along the entire distance of the cleft. Here and there a superficial stitch is taken in order to secure absolutely perfect coaptation. Fine silkworm gut, or horse-hair or silk is used for this purpose. The two lateral incisions are now carefully packed with iodoform gauze which completes the operation.

The lateral incisions cause a considerable amount of hæmorrhage, which, however, does not give rise to any difficulty so long as the head is kept in the dependent position. Simple pressure with a sponge or packing with gauze always controls the hæmorrhage without difficulty. The operation can always be completed in less than an hour.

After the operation the mouth is kept as clean as possible by thorough irrigation with warm water half a dozen times a day. This is very agreeable to the patient, prevents him from losing his appetite, and certainly facilitates healing by reducing the likelihood of infection.

Only liquid food is given during the first week. The iodoform packing in the lateral incisions is removed from four to eight days after the operation, permitting these



openings to close by granulation, which occurs within a few days.

If there is any infection along the stitches they are removed after the third or fourth day. If any small defect remains it is touched once a day with tincture of cantharides, which acts as a very useful stimulant, frequently causing quite large defects to close entirely.

In case a defect is so large that one cannot expect it to close by granulation, it is well to wait until about the tenth day after the operation, when the surfaces are usually covered with clean, healthy granulations, especially if the tincture of cantharides has been used, and then apply secondary sutures enough to bring the surfaces in apposition again.

Usually this will suffice to secure union throughout, but occasionally it will have to be repeated.

Many needles have been invented with which to apply the necessary sutures. Most of the simpler ones are very useful, and it matters little which one is chosen. The superficial coaptation sutures can best be applied by means of a very fine, full-curved needle.

It is well to bear in mind a few practical points in connection with this operation, which aid greatly in securing uniformly satisfactory results:

1. If the patient suffers from enlarged tonsils these should be removed and the surfaces permitted to heal before the operation for cleft palate is attempted.

2. Large ulcers which are likely to exist in the roof of the nose should be treated prior to performing the operation, because their presence is almost certain to cause an infection which will prevent union.

3. The patient should have decayed teeth filled or removed for the same reason.

4. He should be free from cough at the time of the operation.

5. It is exceedingly difficult to operate in children less than three years old, and the after-treatment is almost impossible.

No matter how perfect the result of the operation may be, it is always necessary to follow this with systematic instruction in speaking. Mothers of such children are usually willing to sacrifice any amount of time, and if taught how to

instruct the patient they will usually obtain very satisfactory functional results. The histories of my cases will be published in connection with a description of the methods to be employed in teaching patients to speak after this operation.

1. Roux and Graefe were the first who had numerous successful cases.
2. Krimer (1824) made flaps of mucus membrane; he was followed by Dieffenbach, Roux Pollock, Field, Fergusson and others. Langenbeck and Masson Warren both invented flaps, including the periosteum.
3. Dieffenbach relieved the tension by lateral incisions.
4. Billroth loosens the hamular process.
5. Dieffenbach suggested making bone flaps by sawing off the palatine process along the alveolar process. Buhning and Wutzer made use of this method in 1850, using a chisel instead of the saw. Julius Wolff has recently demonstrated the excellence of this method in many cases.